Research Report

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Tweeting Out Surveys to Pro-Ukraine Influencers

Exploring the Potential for Enlisting Support in the Information Fight Against Russia

Ukrainian populations that speak the Russian language or hold Russian heritage might be appealing targets for Russian propaganda. Previous RAND Corporation research from 2018 analyzing Russian-language Twitter feeds emanating from Eastern Europe identified two large and influential communities: one group of seemingly "pro-Ukraine activists" who oppose Russian influence and support Ukrainian democracy and another group of seemingly "pro-Russia activists" who disseminate Russian social media content and oppose an independent Ukraine. At the time, RAND researchers recommended that Ukraine and Western organizations work to enlist the pro-Ukraine activists in efforts to counter Russian propaganda.

The study outlined in this report used Twitter advertisements to solicit survey participation from the most-influential members of this pro-Ukraine activist community, influential members of the

KEY FINDINGS

- This study used Twitter advertisements to solicit survey participation from the most-influential members of pro-Ukraine and pro-Russia communities of Twitter users identified in an analysis of 25 million Russian language tweets emanating from Eastern Europe.
- Survey results suggest that pro-Ukraine activists are eager to counter Russian influence. Large percentages of respondents reported using Twitter to help counter Russian influence, and they take this activism to other social media accounts and offline channels, including talking to family members or friends and—to a lesser extent—participating in advocacy groups.
- At least half of the sample reported being open to receiving additional social media training, and most did not seem opposed to taking this support from the European Union, United States, or Ukraine. However, a hypothetical agreement to receive funding or participate in training does not mean that participants actually would do so.
- Following a brand ambassador model would help connect influential users with training and content. This model would involve reaching out, building an initial relationship, and establishing trust with these activists. It might be possible to help such users join together to advocate for a unified and democratic Ukraine, increase awareness of particular Russian influence campaigns, disseminate memes or video content addressing media literacy, or identify Russian bots and trolls.

pro-Russia community, and a general population of Russian-language Twitter users from Ukraine. These advertisements, which cost a total of $1,152, successfully recruited 146 pro-Ukraine activists (of a total population of 3,167 accounts), 66 pro-Russia activists (of a total population of 2,985 accounts), and 1,103 general population respondents.

Our results demonstrate that a large percentage of pro-Ukraine activists support the United States and European Union and oppose Russia and its influence on Ukraine. Pro-Russia activists support Russia and have mixed views on the European Union and the United States. Large percentages of the pro-Ukraine activists also report using Twitter to help counter Russian influence. They take this activism to other social media accounts and to offline channels, including talking to family members or friends and—to a lesser extent—participating in advocacy groups. At least half of the pro-Ukraine activist sample is open to receiving additional social media training, and they do not seem opposed to taking educational or financial support from the European Union, United States, or Ukraine.

It might be possible to follow a model that is often used in the commercial marketing sector whereby Ukraine, allied nations, or organizations in the West support influential pro-Ukraine activists with training, sharable content, a supportive network, and perhaps financial support that could enhance and shape their impact with key audiences (Helmus and Bodine-Baron, 2017).

Russia is engaged in a highly active and worldwide propaganda campaign that is particularly directed against Ukraine. Following the 2014 Ukrainian revolution, Russia annexed Crimea and directed an armed insurrection in Ukraine's eastern region in an ongoing hybrid warfare campaign. Russia also has employed state-funded television network RT, operated various Kremlin-supported news websites, and engaged in a sophisticated social media campaign that includes news tweets, unattributed comments on webpages, troll and bot social media accounts, and fake hashtag and Twitter campaigns.[1]

The Russian ethnic and Russian-speaking populations in Ukraine represent a particular target for Russian propaganda operations. According to a 2017 survey that asked Ukrainians what language they speak at home, 53 percent of the population speaks Russian at least part of the time. Specifically, 15.8 percent speak only Russian, 12.3 percent speak mostly Russian, and 24.9 percent speak both Ukrainian and Russian equally. However, the same poll suggests that only 6.3 percent of Ukrainians identify as Russian (TSN, 2017). Many of the Russian-speaking people reside in southern and eastern Ukraine, including in Crimea and Donbass (see Kulyk, 2019).

Russian language, heritage, and identity make these populations uniquely appealing targets for Russian propaganda. The Russian government's compatriot policy, applied across the former Soviet states of Eastern Europe, codifies the Russian government's interest in influencing such populations to support pro-Russia causes (Zakem, Saunders, and Antoun, 2015). Influence efforts seek to drive a wedge between ethnic Russian and Russian-speaking populations and their host governments. This might not seem like a difficult task for the Russian state, given the relative ease with which Russian-language broadcasts, websites, and other channels of influence can reach Russian nationals and co-linguists residing in Eastern Europe (Helmus et al., 2018). Consequently, efforts that can protect these populations from Russian influence and improve their connections to the Ukrainian state and the broader West might be valuable.

Abbreviations

CI	confidence interval
CLA	community lexical analysis
ISIS	Islamic State of Iraq and Syria
StratCom COE	NATO Strategic Communications Centre of Excellence

In an earlier study, RAND Corporation researchers sought to better understand Russian propaganda directed at the Russian ethnic and linguistic populations of Eastern Europe (Helmus et al., 2018). This study used a recently established method called *community lexical analysis* (CLA), which combines lexical and social network analysis in an iterative approach to identify and characterize different communities on Twitter (Bodine-Baron et al., 2016). The authors used this method to analyze more than 22 million Russian-language tweets from more than 500,000 unique user accounts in Eastern Europe. The researchers identified two large and highly influential communities of Twitter users that seemingly were locked in a pitched battle of ideas. Both communities were large, approximately 40,000 strong, and highly influential. Using a lexical analysis of the full body of tweets from these two communities, the RAND team found that one community, which we call *pro-Ukraine activists*, disseminated content that was highly supportive of a free and democratic Ukraine and opposed Russian influence and propaganda. In contrast, the opposing community, which we call *pro-Russia activists*, appeared to support the Russian state, disseminate pro-Russia social media content and news, and oppose a Ukraine allied with the West.

The RAND team also demonstrated that social network analyses could be used to rank order each member of the pro-Ukraine and pro-Russia activist communities according to the degree to which they exerted influence in the network. At the top of each list are the *key influencers*, or people who can disproportionately affect the broader dialogue on Twitter and possibly even the knowledge and beliefs of their followers.

RAND researchers recommended drawing on key influencers in the pro-Ukraine activist community to help counter Russian propaganda in the region. These activists advocate for Western democratic values and a free Ukraine, and their use of the Russian language enables them to communicate directly with a key audience specifically targeted by Russian propaganda.

To assist these advocates, RAND researchers recommended that Ukrainian and allied governments and nongovernmental organizations follow a brand ambassador model. In the commercial sector, businesses use this model to identify key influencers within their fan bases. Businesses then empower those influencers through a series of engagements that seek to enhance the influencers' social media and communication skills and connect them with sharable content (Helmus and Bodine-Baron, 2017). The arts and crafts firm Fiskars employs a brand ambassadorship program in which it works with local arts and crafts enthusiasts to help them tell their stories about using Fiskars products. The campaign reportedly generated a 600-percent increase in online conversations ("Hanging Out with the Fiskateers," undated). SAP Business One, a business software firm, has developed and executed a plan for engaging with various trusted experts, including professors, business analysts, and software bloggers (Smith, 2011). Pabst Blue Ribbon benefited from a strategic word-of-mouth program. This program, which targeted the millennial demographic in Portland, Oregon, often is credited with generating a complete turnaround of the brand (Walker, 2003).

> Influence efforts seek to drive a wedge between ethnic Russian and Russian-speaking populations and their host governments.

Brand ambassador campaigns also have been used to promote broader social movements. Campaigns have enlisted teenagers to promote teen anticigarette campaigns and college students to counter radicalization (Courtney, 2019). Word-of-mouth marketing ultimately is about getting more people to share their opinions about a particular topic and to do so in a more-influential, authentic, and credible manner.

It might well be possible to support pro-Ukraine influential Twitter users with training, sharable

content, and perhaps financial support that could enhance and shape their impact with key audiences.[2]

As the RAND team noted in 2018,

> Such an approach received broad support among those we interviewed. Representatives at the StratCom COE talk about supporting an "army of elves" who can create a "bubble of positive messaging." "The more supporters on our side," they observe, "the bigger the bubble of positive messaging. If you have more supporters on your side, you can expect to grow even faster and [have more] influence." A NATO official agrees and notes that such an approach has a unique appeal for NATO, which is otherwise barred from attempting to use psychological operations on its own people and cannot disseminate nonattributed products. (Helmus et al., 2018, pp. 82–83)

But would this population of pro-Ukraine activists even want such assistance? Answering this question was the central purpose of this report. Specifically, we conducted a targeted survey of the most-influential pro-Ukraine activists identified in the 2018 study. The goal of this survey was to identify the extent to which pro-Ukraine activists used Twitter and other social media platforms to counter Russian influence in the region. We also sought to assess the extent to which these influencers would be interested in social media training or even ongoing funding from or partnership with Ukraine and the West.

We used this opportunity to survey representatives of the pro-Russia activist community as well. By comparing the results of the pro-Russia and pro-Ukraine communities, we could test whether the previously discovered pro-Russia activist and pro-Ukraine activist communities were indeed pro Russia and pro Ukraine. This exercise would help us assess the validity of the original CLA study.

Finally, we surveyed a general population of Russian-language Twitter users in Ukraine. The main goal of surveying this population was to test the utility of using Twitter for surveying a general population. The results also would provide a means of comparison for the pro-Ukraine sample.

To conduct these surveys, we used targeted Twitter ads and the promise of a $5 cell phone credit to recruit participants. In Figure 1 and Figure 2, we provide two examples of our targeted Twitter ads and their translations. We have included the full English-language survey as an appendix at the end of this report.

To recruit the pro-Ukraine and pro-Russia activists, we added the most-influential Twitter handles in our data set to the Twitter Ads audience manager program, which sent out Twitter ads requesting study participation to those Twitter handles. To recruit the general population, we simply used the audience targeting feature in Twitter, which allowed us to preselect for Russian-language Twitter users ages 18 and older who lived in Ukraine.

Use of Twitter for Surveys

Numerous studies have used social media platforms to recruit survey participants. Facebook is the most commonly used platform for surveys. A 2016 review by Thornton and colleagues noted 110 different studies that used Facebook advertising to help solicit new participants for surveys. That number is surely higher today. These studies generally take advantage of the microtargeting feature available to Facebook advertisers (or, in this case, survey researchers), which allows them to preselect several different audience characteristics, such as age, city of residence, and other characteristics derived from audience behavior on Facebook. These features allowed Pedersen, Naranjo, and Marshall, 2017 to effectively survey an audience of heavy-drinking U.S. military veterans who are not specifically searching for alcohol treatment. Our own team of researchers also used Facebook surveys to assess countering violent extremism (Bodine-Baron et al., 2020) and countering disinformation interventions (Helmus et al., 2020)

Some studies also have used Twitter ads to recruit survey participants. For example, Guillory et al., 2016, compared the effectiveness of Twitter ads with that of an online panel for the recruitment of e-cigarette users. They found that Twitter enabled a faster rate of recruitment than the online panel but the resulting samples differed in terms of age and e-cigarette use. Daniulaityte et al., 2018, used Twitter

ads as the sole recruitment method for a web survey on marijuana concentrate use.

Some studies capitalized on Twitter's previously loose restrictions on spamming to send mention tweets or private messages directly to their target audiences, with the tweets or messages inviting them to take the survey. These studies identified their survey audience by analyzing curated Twitter data sets. For example, Vaccari et al., 2013, identified 275,000 Italian Twitter users who were engaged in discussions of Italian politics, randomly sampled 8,000 users, and invited them to participate in a survey via mention tweet.[3] More recently, Majmundar et al., 2018, used a network analysis of tobacco product–related tweets to build a sample of opinion leaders, followers, and random users and then used Twitter's private message feature to send survey invitations. In our view, this combination of big data analysis of curated Twitter data sets and user-designed surveys affords a powerful analytic tool for researchers. Consequently, an underlying goal for this report was to further establish the utility of using Twitter as a vehicle for recruiting survey participants, specifically by using Twitter ads sent to targeted social media accounts and a general population of users.

About This Report

In the remainder of this report, we detail our methodology, findings, and recommendations. We describe the survey methodology and our findings. We then highlight our key takeaways and discuss limitations on the interpretation of the results. We also identify recommendations for the future use of Twitter advertisements for research. The survey instrument used for this study is presented in the appendix at the end of this report.

Methods

Survey Instrument

The survey instrument we used for this study is presented in the appendix. Because of the sensitive, political nature of the survey, the RAND team

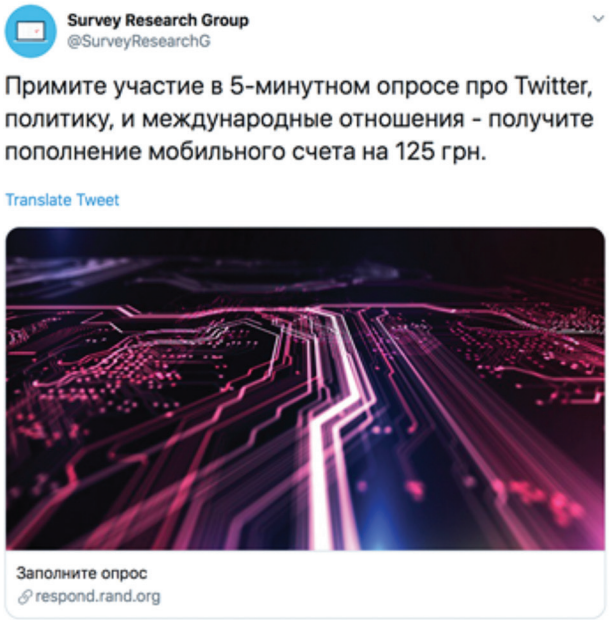
FIGURE 1

Example of Twitter Advertisement: Political Views

NOTE: The Russian-language tweet translates to "Share your political views. Take this five-minute survey and receive a 125 UAH phone credit."

FIGURE 2

Example of Twitter Advertisement: Twitter, Politics, and International Affairs



NOTE: This Russian-language tweet translates to "Take this five-minute survey on Twitter, politics, and international affairs—receive a 125 UAH phone credit."

collected only the most-basic demographic data, such as age (eligibility criterion), country of residence, and—indirectly—language preference (the survey was available in English, Russian, and Ukrainian). Respondents from the general population sample also were asked to provide the number of followers they had. Five survey items asked about general patterns of Twitter use. Four items inquired about attitudes toward the European Union, the United States, Russia, and Russia's involvement in Ukraine. Three items addressed Twitter use for the purposes of influencing the debate on Russian involvement in Ukraine. Finally, seven items examined respondents' desire for social media training and openness to funding. The RAND team also asked about participants' willingness to provide their Twitter handles in potential future Twitter survey studies.

Sample

To recruit the samples for the pro-Russia and pro-Ukraine activists, we referred to the Twitter data set from the previous RAND report on Russian propaganda on social media (Helmus et al., 2018). The RAND team identified 41,000 Twitter users whose tweets, based on lexical analysis, appeared to represent pro-Russia and anti-Ukraine themes and 39,000 users whose tweets appeared to promote a free Ukraine and denigrate Russian influence. We analyzed the user-level networks of the accounts in the pro-Ukraine activist and pro-Russia activist communities.[4] We used network analysis at this level of granularity to rank order each set of users by how influential they are within the community. We specifically rank ordered each user by four different measures of centrality: in-degree, out-degree, eigenvector centrality, and betweenness centrality.[5] We then averaged each username's score for these four measures and used that average value to create a single rank-ordered list of influencers for each community.

From these rank-ordered lists, we selected the usernames that would receive Twitter advertisements offering invitations to take our survey. We did this in two separate tranches. In the first tranche, we provided Twitter's advertising portal with the most-influential 5,500 usernames for both the pro-Ukraine and pro-Russia communities. After Twitter rejected the accounts that were no longer active, we were left with a sample size of 1,599 accounts from the pro-Ukraine community and 1,603 accounts from the pro-Russia community.

The advertisements for this first tranche ran for 11 days. After the response rate to the ads dropped off significantly, we created a second tranche of usernames. This time, we entered 5,500 of the next-most-influential account usernames, and after Twitter rejected inactive accounts, we were left with a sample size of 1,568 accounts from the pro-Ukraine community and 1,382 accounts from the pro-Russia community.

We also decided to test our survey in the general population. For this, we used Twitter's audience-targeting feature to show the ads only to users who are located in Ukraine, speak Russian, and are aged 18 or older. These ads were terminated in less than 24 hours because of the very high response rate.

The total cost of the ads was $1,151.80. The advertisements cost $385.84, $241.45, and $524.51 for the pro-Ukraine activists, pro-Russia activists, and the general survey population, respectively. This study was approved by RAND's Human Subjects Protection Committee.

Audience Response Rate and Data Quality

Ultimately, we targeted 3,167 accounts from the pro-Ukraine community and 2,985 accounts from the pro-Russia community. Table 1 shows the number of advertisement impressions and the number of respondents that clicked on and then initiated the survey. *Impressions* is defined as the number of times advertisements show up in the audience's timeline. It does not indicate the number of users exposed to advertisements or the number of advertisements shown to users. The *number of clicks* indicates the number of times users clicked on the advertisement, and the *click rate* is the ratio of impressions to clicks. Once a user clicked on an advertisement, they were no longer targeted with ads. It is noteworthy that the click rate is higher by a factor of ten for the general population sample than for either the pro-Ukraine

TABLE 1
Impressions, Clicks, and Attrition

	Pro-Ukraine Activists	Pro-Russia Activists	General Sample
Twitter ad impressions	31,457	21,465	152,878
Number of clicks	297	148	14,460
Click rate	0.94%	0.68%	9.46%
Cost of ad campaign	$385.84	$241.35	$523.51
Attrition			
Opened	227	108	1,779
Started (language choice)	212	95	1,565
Eligible (age groups)	200	91	1,349
Consent	165	73	1,183
50 percent completed (threshold for inclusion in analysis)	151	67	1,132

or pro-Russia sample. It could be that the influential users in the pro-Ukraine and pro-Russia samples have more constraints on their time that prevent them from participating in the survey. The financial reward also might have been a more-compelling incentive for a younger audience.

We defined *survey completions* as the number of participants who completed the consent page and responded to at least 50 percent of the survey items. There were 151 respondents from the pro-Ukraine sample, 67 respondents from the pro-Russia sample, and 1,183 respondents in the general population who completed the surveys.

We monitored the Twitter ads to determine that they were not retweeted to audiences outside those originally targeted. This did not happen, but after the study, we Googled the survey link and discovered that it and the ad had been posted to a Russian-language message board. The original post asked the community whether the ad was legitimate and whether one could actually earn $5 for taking the survey. The message received approximately 15 replies. It is impossible for us to determine whether this posting led to any unintended survey responses.

To screen the data, we adopted three criteria for identifying potentially invalid records. First, we reviewed cases in which a single respondent's phone number was tied to more than one survey. We inspected records with nonunique phone numbers provided for the incentive. If responses for both surveys were the same or very similar, we kept the first set of responses and disregarded the second. However, if responses were largely different, we disregarded both as suspicious cases. Second, we identified and excluded surveys with response times of less than two minutes under the assumption that such users clicked through the survey to earn the $5 incentive. Finally, we identified and eliminated surveys for which the majority of responses to questions were either "difficult to answer" or "neutral." In Table 2, we summarize the number of cases removed per group for each of these three factors.

As a result of this screening, we included in our analysis 146 respondents from the pro-Ukraine sample, 66 from the pro-Russia sample, and 1,103 from the general population sample. In more than 90 percent of these cases, the respondents completed 100 percent of the surveys.

Using the targeted study populations of 3,167 users from the pro-Ukraine community and 2,985 users from the pro-Russia community, the margin of error for a 95-percent confidence interval (CI) was 7.92 percent for the pro-Ukraine activists and 11.93 percent for the pro-Russia activists (we round to 8 percent and 12 percent, respectively). We estimated the general population size to be 500,000 users,

TABLE 2
Cases Excluded from the Analysis

	Pro-Ukraine Activists	Pro-Russia Activists	General Sample
Duplicate phone number	5	1	11
Response time less than 2 minutes	0	0	10
Lack of meaningful responses	0	0	8

TABLE 3
Response Times (in Minutes)

	Pro-Ukraine Activists	Pro-Russia Activists	General Sample
Minimum	2	2	2
Maximum	422	59	107
Mean	10.7218	9.333333	4.000982
Median	6	7	2
Standard deviation	37.1631	8.214389	5.873042

which resulted in a 95-percent CI of 2.95 percent for the general population sample.[6]

The response times for this final sample are presented in Table 3. These data show significantly shortened response times in the general sample compared with those in the pro-Ukraine or pro-Russia samples. The mean response times for the general sample are less than half of those of the pro-Ukraine and pro-Russia samples (4.0 versus 10.7 and 9.3 minutes, respectively). Most telling, the median response times remain anchored at two minutes, the shortest response times allowed in the study. The median response times were six and seven minutes for the pro-Ukraine and pro-Russia samples, respectively. This seems to suggest that many participants in the general sample population might have taken the survey with relatively little care.

Findings

Table 4 presents the basic demographics of the three samples. We first consider the pro-Ukraine and pro-Russia samples. These samples appear comparable on several different items, including age and the personal nature of their Twitter accounts. In addition, a majority of both samples reported using Twitter on a daily or near daily basis, and a large majority of participants in both samples reported tweeting about topics related to politics and—to a slightly lesser extent—national security. More than 60 percent of activists in both groups reported that a key goal for their Twitter use is "sharing personal views on important topics and/or trying to influence debate."

However, the pro-Ukraine and pro-Russia groups differ on two key variables. First, the vast majority of participants in the pro-Russia group (95 percent) took the survey in the Russian language, while only half in the pro-Ukraine sample did so. Second, 73 percent of the pro-Russia sample reported that they hailed from Russia, while only one-quarter of participants in the pro-Ukraine sample hailed from Russia. Most pro-Ukraine respondents stated that they resided in Ukraine.

The general population sample differed from pro-Ukraine and pro-Russia samples in several unique and maybe predictable ways. Overall, the general population sample was younger, less political or less focused on national security, tweeted less often, and were less inclined to report using Twitter for the purpose of trying to influence debate.

TABLE 4

Demographics and Twitter Use

	Pro-Ukraine Activists		Pro-Russia Activists		General Sample	
	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N
Age		146		66		1,103
18–35	16 (8, 24)	24	17 (5, 29)	11	53 (50, 56)	581
36–50	53 (45, 61)	77	41 (33, 49)	27	27 (24, 30)	300
51 and older	31 (23, 39)	45	42 (34, 50)	28	20 (17, 23)	222
Language of survey		146		66		1,103
Ukrainian	50 (42, 58)	73	3 (0, 15)	2	11 (8, 14)	124
Russian	49 (41, 57)	71	95 (83, 100)	63	89 (86, 92)	978
English	1 (0, 9)	2	2 (0, 14)	1	0 (0, 3)	1
Country of residence		146		66		1,103
Ukraine	66 (58, 74)	97	15 (3, 27)	10	25 (22, 28)	272
Belarus	1 (0, 9)	1	5 (0, 17)	3	1 (0, 4)	6
Russia	25 (17, 33)	37	73 (65, 85)	48	74 (71, 77)	820
Latvia, Estonia, or Lithuania	1 (0, 9)	2	3 (0, 15)	2	0 (0, 3)	1
Poland	1 (0, 9)	2	3 (0, 15)	2	0 (0, 3)	1
Other	4 (0, 12)	6	2 (0, 14)	1	0 (0, 3)	3
Difficult to answer	1 (0, 9)	1				
Character of Twitter account		146		66		1,103
Personal	92 (84, 100)	134	95 (87, 100)	63	50 (47, 53)	548
Organizational	0 (0, 8)	0	0 (0, 8)	0	23 (20, 26)	250
Difficult to answer	8 (0, 16)	12	5 (0, 17)	3	28 (25, 31)	305
Character of organization		0		0		250
For-profit business	N/A	N/A	N/A	N/A	20 (17, 23)	49
Social or political advocacy	N/A	N/A	N/A	N/A	19 (16, 22)	46
News or journalism	N/A	N/A	N/A	N/A	19 (16, 22)	47
University, think-tank, other research organization	N/A	N/A	N/A	N/A	23 (20, 26)	57
Other	N/A	N/A	N/A	N/A	2 (0, 5)	4
Difficult to answer	N/A	N/A	N/A	N/A	19 (16, 22)	47
Frequency of Twitter use		146		66		1,103
Once or more than once per day	55 (47, 63)	81	64 (52, 76)	42	23 (20, 26)	251
Once or more than once per week	21 (12, 29)	31	21 (9, 33)	14	29 (26, 32)	317
Once or more than once per month	12 (4, 20)	18	8 (0, 20)	5	29 (26, 32)	320
Difficult to answer	11 (3, 19)	16	8 (0, 20)	5	19 (16, 22)	215

TABLE 4—CONTINUED

	Pro-Ukraine Activists		Pro-Russia Activists		General Sample	
	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N
Topics for Twitter use		146		66		1,103
Politics	88 (80, 96)	128	77 (65, 89)	51	13 (10, 16)	143
National security	46 (38, 54)	67	38 (26, 50)	25	5 (2, 8)	55
Sports	25 (17, 33)	37	12 (0, 24)	8	21 (18, 24)	230
Hobbies	29 (21, 38)	42	33 (21, 45	22	28 (25, 31)	311
Arts, television, film	31 (23, 39)	45	29 (17, 41)	19	20 (17, 23)	220
Travel and leisure	25 (17, 33)	36	21 (9, 33)	14	18 (15, 21)	199
Business	14 (6, 22)	20	14 (2, 26)	9	14 (11, 17)	153
Other	18 (10, 26)	26	32 (20, 44)	21	6 (3, 9)	68
Difficult to answer	4 (0, 12)	6	3 (0, 15)	2	16 (13, 19)	173
Goals for Twitter use		146		66		1,103
Growing followers	18 (10, 26)	27	8 (0, 20)	5	3 (0, 6)	38
Promoting personal reputation	10 (2, 18)	15	12 (0, 24)	8	23 (20, 26)	249
Promoting a business or organization	2 (0, 10)	3	5 (0, 17)	3	17 (14, 20)	187
Sharing personal views on important topics and/or trying to influence debate	79 (71, 87)	115	62 (50, 74)	41	16 (13, 19)	171
Connecting with friends	42 (34, 50)	61	41 (29, 53)	27	37 (34, 40)	410
Other	16 (8, 24)	24	14 (2, 26)	9	4 (1, 7)	40
Difficult to answer	5 (0, 13)	8	8 (0, 20)	5	18 (15, 21)	195
Willingness to provide Twitter handle		140		63		1,071
Yes	49 (41, 57)	68	54 (42, 66)	34	37 (34, 40)	398
No	37 (29, 45)	52	33 (21, 45)	21	38 (35, 41)	408
Difficult to answer	14 (6, 22)	20	13 (1, 25)	8	25 (22, 28)	265
Number of followers		N/A		N/A		1,103
Prefer not to answer					7 (4, 10)	77
Min						0
Max						12,000
Mean						985
Median						851
Standard deviation						937

NOTE: The 95-percent CIs for the pro-Ukraine activists, the pro-Russia activists, and the general population are +8, +12, and +3 percent, respectively. N/A = not applicable. Numbers might not sum exactly to their totals because respondents were allowed to select more than one response. The total respondent numbers might vary because of nonresponse.

Most importantly, the general sample population was predominantly from Russia. Like the pro-Russia sample, the general sample predominantly took the survey in the Russian language and 74 percent reported that they resided in Russia. Given the focus on targeting Russian-language audiences who lived in Ukraine, this last observation was most surprising and the reasons for it are unclear. It might be that some respondents saw the reference to the study on the Russian message board. Alternatively, it could be that some Russian-language Ukrainians consider themselves Russian nationals.[7] It is also possible that a subset of the respondents were exposed to the ads while they were traveling from Russia in Ukraine.

In Table 5, we present the responses on the questions addressing attitudes toward Russia, the European Union, and the United States. For the pro-Ukraine and pro-Russia samples, the response patterns to these questions were generally as expected. Specifically, the vast majority of the pro-Ukraine activists reported positive feelings for the European Union and the United States (93 percent and 92 percent, respectively) and negative feelings for Russia (83 percent). Ninety-four percent reported that they oppose Russian influence in Ukraine. These response patterns differ from the pro-Russia group, with more than three quarters of that group reporting positive views of Russia and evidencing an almost even three-way split in positive, neutral, and negative feelings toward the United States. For the European Union, most responses were split between feeling positive and neutral. Fifty-two percent of these activists reported

TABLE 5

Attitudes Toward the European Union, United States, and Russia

	Pro-Ukraine Activists		Pro-Russia Activists		General Sample	
	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N
How do you feel about the European Union?		146		66		1,103
Positive	93 (85, 100)	136	45 (33, 57)	30	47 (44, 50)	516
Neutral	5 (0, 13)	7	42 (30, 54)	28	32 (29, 35)	350
Negative	2 (0, 10)	3	12 (0, 24)	8	1 (0, 4)	14
Difficult to answer					20 (17, 23)	223
How do you feel about the United States?		146		65		1,103
Positive	92 (84, 100)	135	32 (20, 44)	21	46 (43, 49)	511
Neutral	5 (0, 13)	7	32 (20, 44)	21	33 (30, 36)	361
Negative	3 (0, 11)	4	35 (23, 47)	23	3 (0, 6)	29
Difficult to answer					18 (15, 21)	202
How do you feel about Russia?		146		65		1,103
Positive	13 (5, 21)	19	77 (65, 89)	50	36 (33, 39)	395
Neutral	3 (0, 11)	4	8 (0, 20)	5	28 (35, 31)	314
Negative	83 (75, 91)	121	11 (0, 23)	7	14 (11, 17)	156
Difficult to answer	1 (0, 9)	2	5 (0, 17)	3	22 (19, 25)	238
What do you think of the Russian government's influence and role in Ukraine?		146		66		1,100
Positive	2 (0, 10)	3	52 (40, 64)	34	43 (40, 46)	473
Neutral	3 (0, 11)	5	23 (11, 35)	15	19 (16, 22)	208
Negative	94 (86, 100)	137	18 (6, 30)	12	34 (31, 37)	371
Difficult to answer	1 (0, 9)	1	8 (0, 20)	5	4 (1, 7)	48

NOTE: The 95-percent CIs for the pro-Ukraine activists, the pro-Russia activists, and the general population are +8, +12, and +3 percent, respectively. Numbers might not sum exactly to their totals because respondents were allowed to select more than one response. The total respondent numbers might vary because of nonresponse.

that they support Russian government influence in Ukraine and 18 percent reported opposing it.

For the general population sample, the majority of participants were split between being positive and neutral toward the European Union, United States, and Russia. Between 18 and 22 percent of general sample respondents reported that these questions were too difficult to answer. Forty-three percent supported Russian government influence in Ukraine and 34 percent opposed it.[8]

In Table 6, we compare those who supported Russian government influence in Ukraine with those who opposed it. We looked separately at opponents in the pro-Ukraine sample and in the general population sample. Similarly, among supporters of Russian influence, we separated respondents in the pro-Russia sample from respondents in the general population sample.

Table 6 also presents results of questions asking about political behavior on Twitter. Several observations stand out. First, the opponents of Russian

TABLE 6

Political Tweeting: Opponents and Supporters of Russian Government Influence in Ukraine

	Pro-Ukraine Activists Opposing		General Sample Opposing		Pro-Russia Activists Supporting		General Sample Supporting	
	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N
Frequency of tweeting about Russian influence		136		370		34		473
Frequently or sometimes	81 (73, 89)	110	23 (20, 26)	86	44 (32, 56)	15	4 (1, 7)	18
Rarely or never	17 (11, 25)	23	61 (58, 64)	227	53 (41, 65)	18	67 (64, 70)	316
Difficult to answer	2 (0, 10)	3	15 (12, 18)	57	3 (0, 15)	1	29 (26, 32)	139
Opinions about the effectiveness of Twitter for influencing debate on this issue		136		367		34		473
Very effective	19 (11, 27)	26	22 (19, 25)	81	6 (0, 18)	2	33 (30, 36)	159
Somewhat effective	63 (55, 71)	86	50 (47, 53)	183	47 (35, 59)	16	32 (29, 35)	151
Not effective	9 (1, 7)	12	19 (16, 22)	69	35 (23, 47)	12	33 (30, 36)	155
Difficult to answer	9 (1, 17)	12	9 (6, 12)	34	12 (0, 24)	4	2 (0, 5)	8
Other ways to influence debate on this issue or support or oppose Russian involvement in Ukraine		135		362		33		473
Other social media channels (Facebook, VK, Instagram, etc.)	58 (50, 66)	78	28 (25, 31)	103	21 (9, 33)	7	20 (17, 23)	97
Professional activities	27 (19, 35)	36	7 (4, 10)	26	3 (0, 15)	1	1 (0, 4)	7
Advocacy group	19 (11, 27)	26	7 (4, 10)	26	0	0	1 (0, 4)	3
Talk to friends and family	76 (68, 84)	103	42 (39, 45)	152	37 (25, 49)	12	14 (11, 17)	67
Other	1 (0, 9)	1	1 (0, 4)	3	0	0	0 (0, 3)	1
Difficult to answer	3 (0, 11)	4	16 (13, 19)	57	12 (0, 24)	4	25 (22, 28)	119
Do not seek to influence debate	3 (0, 11)	4	29 (26, 32)	104	42 (30, 54)	14	40 (37, 43)	188

NOTE: The 95-percent CIs for the pro-Ukraine activists, the pro-Russia activists, and the general population surveys are +8, +12, and +3 percent, respectively. Numbers might not sum exactly to their totals because respondents were allowed to select more than one response.

The pro-Russia population might have had more reason to be suspicious of online ads that ask them to share political views and provide a consent form that identifies a Western research organization as the source of the ads.

influence in the pro-Ukraine sample appear to actively address this topic both on and off Twitter. The vast majority of respondents (81 percent) reported that they tweet about this issue frequently or sometimes. The consensus appears to be that this behavior on Twitter is somewhat effective. The opponents from the pro-Ukraine sample also appear disproportionately active outside Twitter, with more than half reporting that they address the topic of Russian influence on other social media channels, one-fifth reported being involved in an advocacy group, and 76 percent stated that they talk to family and friends about this issue. This sample of influencers indeed appears to be ardently working to exert influence on this topic and, thus, they might make very useful allies in efforts to oppose Russian influence.

The opponents of Russian influence in the general population sample also preferred talking to family and friends as a way to influence the debate about Russia's role in Ukraine. Half also reported believing that Twitter is somewhat effective; however, a majority reported tweeting about Russian influence rarely or never. Caution is warranted, however, in drawing conclusions from a small sample size of 370 participants.

Finally, in Table 7, we describe responses for questions on social media training and openness to funding. For the pro-Ukraine activists opposing Russian influence, it appears that in general, slightly less than half expressed interest in either short in-person or online social media courses. About 44 percent of the sample reported that they would be interested in financial support, and a majority was interested in receiving that support from Ukraine, the European Union, or even the United States. The sample uniformly rejected the notion of receiving financial assistance from Russia.[9]

Discussion and Implications

We discuss four key implications of our study based on the results discussed earlier. First, we review the utility of the targeted surveys we conducted with the pro-Ukraine and pro-Russia activists. Second, we address the limitations of the general population survey. Third, we address the degree to which the findings comparing pro-Russia and pro-Ukraine activist groups validate the initial CLA in our 2018 study. Finally, we highlight implications for working with pro-Ukraine influencers to counter Russian disinformation.

Utility and Limitations of Targeted Surveys

We successfully used Twitter advertisements to solicit online surveys from a targeted sample of pro-Ukraine activists discovered through analysis of Twitter data. We were less successful in recruiting a sample of pro-Russia activists, which is not surprising. First, the click rate was lower for the pro-Russia sample (0.68 percent) than for the pro-Ukraine sample (0.94 percent). In addition, the percentage of surveys with 50 percent of the items completed also was lower for the pro-Russia sample than for the pro-Ukraine sample (45.3 percent versus 76.4 percent). This led to a substantially reduced survey rate for the pro-Russia sample. This is not surprising: The pro-Russia population might have had more reason to be suspicious of online ads that ask them to share

TABLE 7

Desire for Social Media Training and Openness to Funding: Opponents and Supporters of Russian Government Influence in Ukraine

	Pro-Ukraine Activists Opposing		General Sample Opposing		Pro-Russia Activists Supporting		General Sample Supporting	
	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N
Interest in short in-person course to learn advanced social media skills		134		359		33		473
Very interested	9 (1, 17)	12	21 (18, 24)	76	15 (3, 27)	5	20 (17, 23)	96
Somewhat interested	36 (28, 44)	48	28 (25, 31)	101	27 (15, 39)	9	30 (27, 33)	144
Not interested	45 (37, 43)	60	35 (32, 38)	126	54 (42, 66)	18	27 (24, 30)	127
Difficult to answer	10 (2, 18)	14	16 (13, 19)	56	3 (0, 15)	1	22 (19, 25)	106
Interest in online class to learn advanced social media skills		134		359		33		473
Very interested	9 (1, 17)	12	16 (13, 19)	57	9 (0, 21)	3	24 (21, 27)	112
Somewhat interested	37 (29, 45)	49	29 (26, 32)	103	27 (15, 39)	9	30 (17, 33)	141
Not interested	49 (41, 57)	66	37 (34, 40)	136	58 (46, 70)	19	25 (22, 28)	117
Difficult to answer	5 (0, 12)	7	18 (15, 21)	63	6 (0, 18)	2	22 (19, 25)	103
Interest in financial support		134		359		33		473
Very interested	19 (11, 27)	25	20 (17, 23)	73	12 (0, 24)	4	24 (21, 27)	113
Somewhat interested	25 (17, 33)	33	28 (25, 31)	102	21 (9, 33)	7	26 (23, 29)	123
Not interested	50 (42, 58)	67	35 (32, 38)	125	64 (52, 76)	21	27 (24, 30)	129
Difficult to answer	7 (0, 15)	9	16 (13, 19)	59	3 (0, 15)	1	23 (20, 26)	108
Willingness to accept the support from Ukraine		132		352		33		471
Likely	61 (53, 69)	81	41 (38, 44)	144	24 (12, 36)	8	6 (3, 9)	29
Unlikely	32 (24, 40)	48	44 (41, 47)	155	73 (61, 85)	24	62 (59, 65)	293
Difficult to answer	2 (0, 10)	3	15 (12, 18)	53	3 (0, 15)	1	32 (29, 35)	149
Willingness to accept the support from the European Union		132		352		33		471
Likely	65 (57, 73)	86	52 (49, 55)	181	39 (27, 51)	13	30 (27, 33)	139
Unlikely	34 (26, 42)	44	36 (33, 42)	127	61 (49, 73)	20	49 (46, 52)	229
Difficult to answer	2 (0, 10)	2	12 (9, 15)	44	0 (0, 12)	0	22 (10, 25)	103
Willingness to accept the support from the United States		132		352		33		471
Likely	66 (58, 74)	87	51 (48, 54)	180	24 (12, 36)	8	28 (25, 31)	134
Unlikely	33 (25, 41)	43	39 (36, 42)	135	76 (64, 88)	25	50 (47, 53)	235
Difficult to answer	2 (0, 10)	2	11 (8, 14)	37	0 (0, 12)	0	22 (19, 25)	102

TABLE 7—CONTINUED

	Pro-Ukraine Activists Opposing		General Sample Opposing		Pro-Russia Activists Supporting		General Sample Supporting	
	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N	Percentage (95% CI)	N
Willingness to accept the support from Russia		132		352		33		470
Likely	5 (0, 12)	7	21 (18, 24)	72	52 (40, 64)	17	43 (40, 46)	202
Unlikely	95 (87, 100)	125	70 (67, 73)	244	48 (36, 60)	16	38 (35, 41)	178
Difficult to answer	0 (0, 8)	0	10 (7, 13)	36	0 (0, 8)	0	19 (16, 22)	90

NOTE: The 95-percent CI for the pro-Ukraine activists, the pro-Russia activists, and the general population surveys are +8, +12, and +3 percent, respectively.

political views and provide a consent form that identifies a Western research organization as the source of the ads.

One challenge, however, was the relatively high CI for each sample (+8 for the pro-Ukraine sample and +12 for the pro-Russia sample). This is mainly a function of the low overall population size of 3,167 pro-Ukraine activist accounts and 2,985 pro-Russia activist accounts that we tried to sample. With a population size of 3,000, it would have been necessary to successfully recruit 341 responses or 11.4 percent to achieve a more-standard CI of +5. However, if the population size were 6,000, then it would have been necessary to recruit only 361 responses, or 6.0 percent. Thus, targeting a larger sample would have been ideal.

A major benefit of this study's approach is the ability to merge analyses of social media–collected data and survey data. In this case, we drew our survey sample from an analysis of 500,000 Russian-language Twitter users to isolate a sample of 41,000 pro-Russia and 39,000 pro-Ukraine activists. We then used social network analysis to identify the most-influential users for subsequent surveys. Given more time and a larger budget, we could have done more than this. Our surveys found that approximately 50 percent of targeted users would have been willing to provide their Twitter handles. Had we collected these data, we would have been able to cross-reference individual survey responses with individual tweet histories, which would have opened up new opportunities in research. Regardless, the combination of big data analyses of social media data and targeted surveys offers a powerful tool that can aid further research into political participation, public health topics, and national security–focused issues. For the latter, it would aid research efforts on such topics as radicalization, disinformation and media literacy, and state-sponsored propaganda.

One challenge with targeted surveys, at least with how they were used in this study, is that we were unable to establish whether respondents were representative of the targeted sample. The goal of targeting surveys was not to gather a representative population-based sample of data. The accounts targeted for participation were highly unique and selective; specifically, they were highly influential (and thus, highly active on Twitter) and either pro-Russia or pro-Ukraine. However, it would be ideal if the collected surveys were representative of the accounts targeted for surveys. To conduct such a test, it would be important to collect specific Twitter account names from the surveyed participants. This would enable us to compare Twitter account data from the survey participants with account data from the overall targeted sample. Unfortunately, these data were not collected. We might assume that Twitter account users (in both the targeted and general samples) who more-frequently tweeted or simply checked Twitter would be more likely to participate in the study than less-frequent users, merely because they would be exposed to the advertisements with greater frequency.

More research is needed, but it might be best to not include an incentive for survey participation.

Limitations of the General Population Survey

It remains unclear whether we successfully surveyed a general population of Russian-language Ukrainians. There were two key issues related to this survey. First, 74 percent of the users reported hailing from Russia, although the surveys specifically targeted Twitter users in Ukraine. As we noted in the findings section, there could be several reasons for this: The survey could have picked up Russian nationals traveling in Ukraine, a subset of Ukraine-based participants could have self-identified as being in Russia, and the Russian message board website publicizing the survey could have affected the respondents. This confusion could have been ameliorated if we had included an additional question asking for a specific city or subregion of residence. The second issue had to do with the median number of participants taking the survey in the two-minute time frame versus the six- to seven-minute median of the targeted samples. This would suggest that general sample participants took the survey with limited care, possibly with the primary goal of earning the offered $5 reward. To protect against this, it would have been ideal to include several additional questions that could test the internal consistency of responses.

It also might have been wise to offer a reduced reward for survey participation or possibly no reward at all. The study soliciting survey participants to study marijuana use (Daniulaityte et al., 2018) did not offer any financial incentive for participation and was able to successfully recruit 687 U.S.-based cannabis users (the publication did not include references to advertising impressions or click rates). Interestingly, after we collected our original tranches of survey data, a late decision was made to solicit a final tranche of pro-Ukraine and pro-Russia participants. For this survey, we drew on 6,603 additional pro-Ukraine and 6,192 additional pro-Russia accounts and activated advertisements for 2.5 days. We removed references to payment in the ads and in the surveys because of budgetary constraints. The click rates for these ads were 1.86 percent and 1.37 percent for the pro-Ukraine and pro-Russia groups, respectively, which was noticeably higher than the 0.94-percent and 0.68-percent click rates for the main study data collection efforts reported in the methods section. More research is needed, but it might be best to not include an incentive for survey participation.[10]

Validation of Community Lexical Analysis

The results of this study appear to validate the initial analytic results from the RAND team's 2018 CLA of Russian-language tweets from Eastern Europe (Helmus et al., 2018). Specifically, that study analyzed a data set of Russian-language tweets geoinferenced to the Eastern European countries of Ukraine, Moldova, Belarus, Lithuania, Latvia, and Estonia. Drawing on community detection algorithms, we distilled 22,825,114 Russian-language tweets from 512,143 unique user accounts into ten of the most-influential communities. We then examined these communities with a lexical analytic tool called RAND-Lex that identified the statistically overpresent or underpresent words or word combinations in each of those ten most-influential communities.[11] A language expert then analyzed the RAND-Lex findings. Using this analytic process, we characterized two large and highly influential communities. One of these communities, which we call pro-Russia activists, consisted of approximately 41,000 users, and RAND-Lex findings suggested that the community consumed and disseminated anti-Ukraine, pro-Russia social media content. An opposing community, which we call pro-Ukraine activists, consisted of nearly 39,000 users who, based on our analysis, appeared to fight back with pro-Ukraine,

anti-Russia content. RAND researchers have used CLA in the past to characterize key communities engaged in pro-ISIS and anti-ISIS conversations on Twitter (Bodine-Baron et al., 2016).[12]

A key question is whether our characterization of the two aforementioned communities as pro-Russia activists versus pro-Ukraine activists is accurate. Hence, we surveyed influential members from each of these communities to better understand whether our characterizations were accurate. In general, the results appeared to corroborate the partisan nature of each group and the influencer role of the individuals surveyed. Both samples tweeted at a high frequency with a self-described focus on politics and national security, and both groups sought to use their Twitter accounts to influence debate. Importantly, the groups differed in expected ways. The majority of pro-Ukraine activists were in favor of the European Union and the United States and opposed to Russia and Russian influence in Ukraine. In contrast, the pro-Russia activists, although less uniform than their pro-Ukraine counterparts, tended to be more opposed to the European Union and the United States, in favor of Russia, and supportive of Russian influence in Ukraine. These findings at least in part validate the classifications derived from RAND-Lex and validate our network analyses, which sought to identify key influencers.

Working with Pro-Ukraine Activists to Counter Russian Influence

The results also suggest that the pro-Ukraine sample—especially the large percentage that opposed Russian influence—is eager to counter Russian influence. Large percentages of this sample reported using Twitter to help counter Russian influence, and they take this activism to other social media accounts and to offline channels, including talking to family members or friends and—to a lesser extent—participating in advocacy groups. At least half of the sample reported being open to receiving additional social media training and most did not seem opposed to taking this support from the European Union, United States, or Ukraine.[13]

This has several potential implications. The methods used for this study—specifically, drawing on analysis of Russian-language Twitter from Eastern Europe that identified key influencers combined with surveys targeting those key influencers—appear to be efficient, scalable, and effective in terms of reaching an audience of highly influential and highly engaged anti-Russia Russian-language activists in Ukraine. Although communication campaigns are never free of risk, we argue that it is possible to use such methods to help counter Russian influence in the country.[14] Following a brand ambassador model would involve reaching out, connecting with such users, building an initial relationship, and establishing trust. Where appropriate, it is possible to offer social media or other leadership training, connect users with other like-minded influencers who can help establish a community of interest, and provide sharable content.

Both training and sharable content might be valuable in terms of helping shape the direction of their Twitter and other social media feeds (and their offline influence efforts). For example, it might be possible to help such users join together to advocate for a unified and democratic Ukraine, increase awareness of particular Russian influence campaigns, disseminate memes or video content addressing media literacy, or identify Russian bots and trolls. Other activists in the region suggest identifying Russian speakers who have a pan-European identity

Following a brand ambassador model would involve reaching out, connecting with such users, building an initial relationship, and establishing trust.

embedded in their social media content and giving them the voice and financial support to carry that message to their audiences (Helmus et al., 2018). Ultimately, planners must exert caution and work through local nongovernmental organizations so as to not unnecessarily damage influencer reputations. They also should take care to let influencers maintain their credibility and independence.

Appendix: Ukraine Twitter Survey—English Version

Q1. In what language would you like to take this survey? На каком языке вы хотели бы пройти этот опрос? Якою мовою Ви б хотіли брати участь в опитуванні?

1. Українською
2. Русский
3. English
4. I prefer to not take this survey. Предпочитаю не проходить опрос. Мені б не хотілось брати участь в цьому опитуванні

Thank you for agreeing to take this survey. The RAND Corporation, a nonprofit, nonpartisan research organization, is conducting a study on the role of Twitter in political dialogue in Eastern Europe. Before we begin, we must ask you one basic screening question.

How old are you?

1. 1–17
2. 18–35
3. 36–50
4. 51 or older
5. Prefer not to respond

The RAND Corporation, a nonprofit, nonpartisan research organization, is funding this study to better understand the relationship between social media habits and opinions about international politics and influence in Ukraine. This 23-item survey will ask questions about these topics, and we will summarize our findings in a research report.

This survey will be completely anonymous. We are not collecting any information that could connect you, your Twitter handle, or your computer's IP address with your responses. We will destroy all data once the study is complete.

Some states, including Russia, might actively surveil the online activity of some activists. Please recognize whether this risk applies to you in responding to this survey.

After you complete this survey, we will ask you to voluntarily provide your cellular phone number to receive a 125 Ukrainian hryvnia or 300 Russian ruble phone credit (around $5) as compensation for your time. This will be used only for reimbursement. RAND will not keep your cellular phone number or connect your phone number with your survey responses in any way whatsoever. You also can decline the compensation.

This study is voluntary. You are free to not answer any questions and you may stop participation at any time. Thank you for your time.

Do you agree to participate?

1. Yes
2. No

Learn about RAND at www.rand.org. If you have questions about this study, you can contact the research coordinator for this study at twitter-survey@rand.org. If you have questions about your rights as a research participant or need to report a research-related injury or concern, contact RAND's Human Subjects Protection Committee by emailing hspcinfo@rand.org. If possible, when you contact the committee, please reference study #2018-2064.

Q2. In what country do you currently live?

1. Ukraine
2. Belarus
3. Russia
4. Latvia, Estonia, or Lithuania
5. Poland
6. Other: _____
7. Difficult to answer

Q3. Is the Twitter account for which you saw this advertisement . . .

1. your personal account?
2. an organizational account?
3. difficult to answer

Q4. What best describes your organization?

1. For-profit business
2. Social or political advocacy
3. News or journalism
4. University, think tank, other research organization
5. Other: _____
6. Difficult to answer

Q5. How frequently do you tweet from this account?

1. More than once per day
2. Once per day
3. Several times per week
4. Once per week
5. Several times per month
6. Once per month
7. Difficult to answer

Q6. What topics do you tweet about? (Choose all that apply)

1. Politics
2. National security
3. Sports
4. Hobbies
5. Arts, television, and film
6. Travel and leisure
7. Business
8. Other: _____
9. Difficult to answer

Q7. What are your main goals for using Twitter? (Choose all that apply)

1. Growing followers
2. Promoting personal reputation
3. Promoting a business or organization
4. Sharing personal views on important topics and/or trying to influence debate
5. Connecting with friends
6. Other: _____
7. Difficult to answer

Now I'd like to ask you about your opinions on particular topics.

How do you feel about each of the following:

Q8. European Union

1. Very positive
2. Positive
3. Neutral
4. Negative
5. Very negative
6. Difficult to answer

Q9. United States

1. Very positive
2. Positive
3. Neutral
4. Negative
5. Very negative
6. Difficult to answer

Q10. Russia

1. Very positive
2. Positive
3. Neutral
4. Negative
5. Very negative
6. Difficult to answer

Q11. What do you think of the Russian government's influence and role in Ukraine?

1. I strongly support Russia's influence and involvement in Ukraine
2. I moderately support Russia's influence and involvement in Ukraine
3. I neither support nor oppose Russia's influence and involvement in Ukraine
4. I somewhat oppose Russia's influence and involvement in Ukraine
5. I strongly oppose Russia's influence and involvement in Ukraine
6. Difficult to answer

Q12. To what extent do you tweet about the issue of Russian influence and involvement in Ukraine?

1. Frequently
2. Sometimes
3. Rarely
4. Never
5. Difficult to answer

Q13. How effective is Twitter for influencing debate on this issue?

1. Very effective
2. Somewhat effective
3. Not effective
4. Difficult to answer

Q14. In what other ways, if any, do you seek to influence debate on this issue or support or oppose Russian involvement in Ukraine? (select all that apply)

1. Other social media channels (Facebook, VK, Instagram, etc.)
2. In my professional activities
3. I volunteer for an advocacy group
4. I talk to friends and family
5. Other: _____
6. Difficult to answer
7. I do not seek to influence debate on this issue or support Russian involvement in Ukraine

Please rate the degree to which you'd be interested in or benefit from the following:

Q15. Taking a short in-person course to learn advanced social media skills (e.g., how to create engaging and influential posts, build followers)

1. Very interested
2. Somewhat interested
3. Not interested
4. Difficult to answer

Q16. Taking an online class to learn advanced social media skills (e.g., how to create engaging and influential posts, build followers)

1. Very interested
2. Somewhat interested
3. Not interested
4. Difficult to answer

Q17. Receive external funding to support your social media activities

1. Very interested
2. Somewhat interested
3. Not interested
4. Difficult to answer

If any of the governments listed below were to offer funding or educational support to advance your use of social media, would you accept it? Please provide an answer for each item below.

Q18. Ukraine

1. Very likely
2. Somewhat likely
3. Not likely
4. Not at all
5. Difficult to answer

Q19. European Union

1. Very likely
2. Somewhat likely
3. Not likely
4. Not at all
5. Difficult to answer

Q20. United States

1. Very likely
2. Somewhat likely
3. Not likely
4. Not at all
5. Difficult to answer

Q21. Russia

1. Very likely
2. Somewhat likely
3. Not likely
4. Not at all
5. Difficult to answer

Q22. We want to ask you a hypothetical question. In future research, we are interested in being able to compare participants' survey responses with their Twitter feeds. If we were to ask you to provide us with your Twitter handle, is this something you would, in theory, be willing to provide? Please note that we are not really asking you to provide us your Twitter handle, we are just asking if you would, were we to ask.

1. Yes, I would provide my Twitter handle
2. No, I would not provide my Twitter handle
3. Difficult to answer

Thank you for taking this survey.

Q23. Our last question: How many followers do you have on Twitter? [This question was asked only of the general population]

_____

- I prefer not to answer

Q24. Would you like to receive a phone credit as compensation for your time?

1. Yes
2. No

Please enter your mobile phone number. This will be used only for reimbursement. RAND will not keep your cellular phone number or connect your

phone number with your survey responses in any way whatsoever.

_____ Country code

_____ Mobile phone number

- I do not want to provide my mobile phone number.

We are able to send phone credits to the following countries and mobile providers:

- Ukraine (most mobile providers)
- Russia (most mobile providers)
- Romania (most mobile providers)
- Poland (most mobile providers
- Belarus (JLLC MTS and Life mobile providers only)
- Lithuania (Tele2 mobile provider only)
- Moldova (Moldcell mobile provider only)

If you live in some other country or have a different mobile provider, you may still enter your mobile phone number, but we cannot guarantee that we will be able to send you a phone credit.

Thank you for your time.

As with any important topic, there might be risks if your specific comments were made known outside the research team. Risks associated with such a disclosure might increase if, for example, you provide comments that were critical of your agency or employer. However, RAND will keep the information you provide confidential and will not release it without your permission, except as required by law. We are following procedures to ensure that there will not be any inadvertent release of information, including removing all direct identifiers, such as your name and contact information from the interview notes; storing all interview notes in a password-protected computer; and destroying all interview notes once the project is complete.

Attribution and Voluntary Participation

We will be preparing a report based on this and other interviews and we plan to include some quotes from our respondents. We will treat your remarks as confidential and will not cite you in connection with anything you say. Your participation in this interview is entirely voluntary—you should feel free to decline or you may choose not to answer any given question. Your decision will not affect your relationship with RAND. Do you have any questions? Do you agree to participate in this interview? [Mark response on interview form guide]

If you have any questions or concerns about your rights as a research subject, please contact the Human Subjects Protection Committee at (866) 697-5620 or hspcinfo@rand.org. The mailing address is Human Subjects Protection Committee, RAND, 1700 Main Street, Santa Monica, CA 90407.

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Notes

[1] See, for example, Helmus et al., 2018; NATO Strategic Communications Centre of Excellence (StratCom COE), 2016; Paul and Matthews, 2016; and Zhdanova and Orlova, 2017.

[2] Many options exist for how such a word-of-mouth or brand ambassador campaign could be conducted. Russian-language Ukrainians who are influential on social media could, for example, help promote campaigns designed to enhance pro-Ukraine views among Russian-language populations or help inform such populations about the risks of Russian propaganda. They also could help promote key tenets of media literacy. By virtue of speaking the Russian language, such individuals can communicate more clearly with Russian-speaking populations and they might have more credibility than a government spokesman. Because such individuals have established social networks, they offer a more-powerful pedestal for messaging.

[3] The specific invitation tweet read as follows: "@[username] University research on social media use: Would you like to participate? [link to the survey]."

[4] The analysis of geotagged tweets revealed that while the majority of participants hailed from Ukraine, users also resided in a variety of regional states, including Russia, Belarus, Moldova, and the Baltic nations. For this reason, we offered payments in Russian rubles and other regional currencies.

[5] In the context of the community network, *in-degree* represents the number of unique users who mention a specific user in the given community. *Out-degree* represents the number of unique users who are mentioned by other users in the given community. *Eigenvector centrality* measures the number of nodes to which the community is connected and gives higher weight to nodes with high centrality scores. *Betweenness centrality* measures the brokerage power of a given account and counts the number of pairs of other nodes a given node is between. We are not aware of previous research that combines these measures into a single influencer or centrality score. However, each measure represents a unique type of influence, and it seemed reasonable that combining these different measures into a single overall score best captured a user's potential for influence.

[6] We drew the population size from the 500,000 Russian-language Twitter users identified in our previous study (Helmus et al., 2018). That analysis identified Russian-language users who tweeted over a three-month period and were determined to be from Ukraine, Belarus, Moldova, Estonia, Latvia, and Lithuania. Therefore, it is likely an overestimate of the true number of Russian-language Twitter users in Ukraine.

[7] It is noteworthy, however, that one 2014 survey found that Russian speakers in central and western regions of the country and in the eastern and southern sections of the country identify themselves as Russian at rates of only 6 and 9.3 percent, respectively (Kyiv International Institute of Sociology, September 2014, as cited in Kulyk, 2019).

[8] Among all respondents who support Russian involvement in Ukraine (and across all subsamples), 95 percent reported being Russian residents (483 of 510). Among those who oppose Russian involvement, 56 percent reported being from Ukraine and 41 percent reported being from Russia (293 and 211, respectively, of 520).

[9] Participants that do and do not report tweeting about political topics or national security appear to not differ in terms of the percentages that would accept external financial support.

[10] It also might be that the $5 payment for the 20-minute survey was excessive. In comparing cost-of-living standards between the United States and Ukraine, it is clear that the $5 payment goes farther in Ukraine than it does in the United States. According to Numbeo, a website that provides cost-of-living comparisons, a meal at an inexpensive restaurant costs $5.45 in Ukraine and $15.00 in the United States, a domestic beer costs $1.05 in Ukraine and $4.50 in the United States, and a cappuccino costs $1.13 in Ukraine and $4.13 in the United States (Numbeo, undated). Another way to make this comparison is to examine purchasing power parity. In 2018, purchasing power parity for private consumption for Ukraine was 7.2 local currency unit per international dollars (Knoema, undated). The purchasing power parity conversion factor represents "the number of units of a country's currency required to *buy* the same amounts of goods and services in the domestic market as [a] U.S. dollar would *buy* in the United States" (InduxMundi, undated; emphasis added).

[11] RAND-Lex is a proprietary suite of analytic tools that RAND researchers created to perform rigorous and complex text analytics at scale. Specifically, RAND-Lex provides a test of "aboutness" through keyness testing for conspicuously overpresent or absent words. It identifies both individual keywords and collocates, or unique combinations of words, that can then be analyzed in context by our language experts.

[12] The organization's name transliterates from Arabic as al-Dawlah al-Islamiyah fi al-'Iraq wa al-Sham (abbreviated as Da'ish or DAESH). In the West, it is commonly referred to as the Islamic State of Iraq and the Levant (ISIL), the Islamic State of Iraq and Syria, the Islamic State of Iraq and the Sham (both abbreviated as ISIS), or simply as the Islamic State (IS). Arguments abound as to which is the most-accurate translation, but here we refer to the group as ISIS.

[13] It is important to note that a hypothetical agreement to receive funding or participate in training does not mean that participants actually would do so. In future studies, a behavioral measure, such as having participants sign up for training, can be included. This would give us a more-accurate indication of willingness to participate. In addition, it is unclear whether such individuals would participate if they knew in advance that their help was solicited specifically to counter Russian influence.

[14] There is growing evidence that some communication campaigns can produce unanticipated negative side effects. Evidence suggests that some counter–violent extremism campaigns, for example, can lead to hardened extremist attitudes in some subpopulations. One theory is that media attacking strongly held beliefs can make the people holding those beliefs more resistant to argument. The media, for example, could spark an immediate defensive response or argument in the mind of an audience member that can reinforce and strengthen preexisting radical views (see Darden, 2018, for a review). Such risks also could attend a counter–disinformation influencer campaign. Although a full articulation of such risks and risk-mitigation strategies is beyond the scope of this report, it goes without saying that campaign planners will have to monitor the impact of the influencer campaign.

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About This Report

Russia continues to prosecute an information war directed at Ukraine. Given their shared heritage, Ukrainian populations that speak the Russian language might be appealing targets for this propaganda. Previous RAND research has identified a large and influential community of Russian-language Twitter users who appear to be ardent supporters of a free and democratic Ukraine and who oppose Russian influence. This research used Twitter advertisements to recruit the most-influential members of this "pro-Ukraine activist" community (and members of other key groups) for a survey to determine the extent to which they would participate in efforts to counter Russian propaganda.

This report should be of interest to policymakers concerned with the relationship between Russia and Ukraine and researchers who study the use and effectiveness of propaganda.

In accordance with the appropriate statutes and regulations regarding human subject protection, the researchers used human subject protection protocols for this report and its underlying research. The opinions, findings, and conclusions stated herein are those of the authors and do not necessarily reflect those of the RAND Corporation.

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